

### **Remarks**

#### **Claim Status**

Claims 1-91 were originally presented for examination in this application. In a preliminary amendment filed on May 14, 2004, Applicants cancelled claims 41-91. A restriction requirement was issued on February 14, 2006, and Applicants elected claims 26-40 in response thereto. An Office Action was issued on April 7, 2006, rejecting claims 26-40.

- Claims 26 and 34-37 were objected to due to certain minor informalities. Applicants have amended the claims to address these informalities, and request the withdrawal of these objections.
- Claims 1-26 were rejected as unpatentable under 35 U.S.C. 101 as being directed to non-statutory subject matter. Applicants have amended the claims to in such a manner as to describe tangible embodiments of the invention, and therefore request the withdrawal of these rejections.
- Claims 26-39 were rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 2002/0123847 to Askenazi ("Azkanazi").
- Claim 40 was rejected under 35 U.S.C. 103(a) as being obvious in light of Askanazi in view of U.S. Patent Publication No. 2002/0198858 to Stanley et al. ("Stanley").

In this response, Applicants have amended claims 26 and 34-37 to address a minor typographical errors, and amended claim 26 to further clarify and describe the invention with greater particularity. Applicants have also added new claims 92-106, including new independent claim 101. Support for these amendments and new claims can be found throughout the specification, and at least at paragraphs [0123], [0130], [0142], [0154], [0155], at [0171] – [0179] of the application as published as U.S. Patent Application Publication No. 2005/0038608. No new matter has been added.

### Information Disclosure Statements

A Supplemental Information Disclosure Statement is being filed herewith based on correspondence received on June 29, 2006, from the International Bureau of the World Intellectual Property Organization related to a commonly-owned, co-pending case.

### Claim Rejections Under 35 U.S.C. 102(e)

#### Claim 26

Independent claim 26, as amended, includes an inference engine for managing the addition of new data by instantiating case frames to represent the new data, and further assuring the instantiated case frames conform to a life science ontology. As a result, new life science assertions are created in a database that are consistent with the ontology. This element is absent from the cited art.

Briefly, Askenazi describes a method for determining associations among a set of biological elements within a pre-defined set of elements, and based on the associations, generating a Steiner tree. Askenazi, para. [0025]. More specifically, the methods described by Askenazi rely on the prior existence of biorelationships within a database, and a “context set” of biological elements that are already represented in the database – what is unknown is merely the exhaustive set of relationships that connect the elements in the context set. Askenazi, para. [0031] and [0033]. Askenazi then uses an algorithm to extract the elements and relationships that connect the elements on the context set and generate a Steiner Tree. Askenazi, para. [0033]. No new data is ever created or added to the database.

The presented claims go well beyond what is disclosed in Askenazi. In addition to a database of biorelationships, Applicants’ invention provides an inference engine that is capable of adding new data to the database by creating new instantiations of existing case frames and ensuring that the instantiations remain consistent with a life science ontology. In doing so, Applicants’ invention facilitates the rapid expansion of the database in a manner that is beyond what would otherwise be possible using traditional human inspection methods. Such automation and ontology enforcement is clearly not contemplated by Askenazi.

Moreover, Stanley does not cure the discrepancies of Askenazi. Briefly, Stanley describes a software architecture that represents data records using “Intelligent Molecular Objects” (IMOs), which provide a means for querying heterogeneous data sets using a common interface. Stanley does not contemplate using pre-existing case frames and a life science ontology to govern the introduction of new data into biological knowledge base.

Thus, because neither Askenazi nor Stanley teaches or suggests every element of independent claim 26 as amended, Applicants respectfully submit that these references, alone or in combination, fail to anticipate these claims or render the claims as obvious. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 26 under 35 U.S.C. §102(e), as well as those claims that depend directly or indirectly therefrom.

#### New Independent Claim 102

Newly presented independent claim 102 recites in part, an electronic database for storing a plurality of case frames, wherein the database includes case frames representing protein phosphorylation reactions, gene expressions, and transcriptional activations. Neither the database described Askenazi, nor the software objects described by Stanley model these biological functions.

Thus, because neither Askenazi nor Stanley teaches or suggests every element of independent claim 102 as amended, Applicants respectfully submit that these references, alone or in combination, fail to anticipate these claims or render the claims as obvious. Accordingly, Applicants respectfully request that claim 102, as well as those claims that depend directly or indirectly therefrom, are allowed.

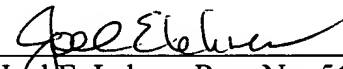
**Conclusion**

Applicants respectfully submit that, in light of the foregoing amendments and remarks, claims 26-40 and 92-106 are in condition for allowance, and requests that application proceed to issue. If, in the Examiner's opinion, a telephonic interview would expedite the favorable prosecution of the present application, the undersigned attorney would welcome the opportunity to discuss any outstanding issues and to work with the Examiner toward placing the application in condition for allowance.

Respectfully submitted,

Date: July 5, 2006

Tel. No.: (617) 570-1057  
Fax No.: (617) 523-1231

  
\_\_\_\_\_  
Joel E. Lehrer, Reg. No. 56,401  
Attorney for Applicants  
Goodwin | Procter LLP  
Exchange Place  
53 State Street  
Boston, Massachusetts 02109